

I claim:

- 1 1. A hydraulic system for an aircraft comprising;
2 a hydraulic pump for pumping a hydraulic fluid through the hydraulic system at a
3 normal operating pressure;
4 a reservoir for holding the hydraulic fluid; and
5 a two-stage pressure relief valve comprising:
6 a first stage for compensating for increases in hydraulic system pressure
7 over the normal operating pressure and up to a selected threshold pressure
8 level; and
9 a second stage for bringing the hydraulic system pressure down to a
10 selected reduced operating pressure that is below the normal operating pressure
11 in response to increases in the operating pressure over the threshold pressure
12 level.
- 1 2. The hydraulic system according to claim 1, further comprising:
2 an optional heat exchanger for cooling the hydraulic fluid.
- 1 3. The hydraulic system according to claim 1, further comprising:
2 a timing means operably associated with the second stage for delaying full
3 operation of the second stage.
- 1 4. The hydraulic system according to claim 3, wherein the timing means is a flow
2 restrictor.
- 1 5. The hydraulic system according to claim 3, wherein the timing means allows for
2 short spikes in the pressure of the hydraulic system prior to opening of the second
3 stage.
- 1 6. The hydraulic system according to claim 1, wherein the threshold pressure level
2 is about 22% higher than normal operating pressure.

- 1 7. The hydraulic system according to claim 1, wherein the selected reduced
- 2 operating pressure is about 30% lower than the normal operating pressure.